REMARKS

Claims 1, 3, 5-8, 10, 12-15, 17, 19-21, and 26 are pending in the application.

Claims 1, 3, 5-8, 10, 12-15, 17, 19-21, and 26 stand rejected.

Claims 1, 3, 5, 7, 8, 10, 12, 14, 15, 17, 19, 21, and 26 have been amended. Support for the amendments can be found at ¶¶ [0029], [0030], and [0036], for example.

Rejection of Claims under 35 U.S.C. §112

Claims 1, 3, 5, 7, 8, 10, 12, 14, 17, 19, 21 and 26 stand rejected under 35 U.S.C. § 112, first paragraph, as purportedly failing to comply with the enablement requirement due to the claims reciting "asynchronously, aperiodically replicating data." *See* Office Action, p. 2. The Office Action alleges that asynchronous, aperiodic replication of data is "not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention." *Id.* Applicants offer amendments and respectfully traverse this rejection.

Applicants have amended claims 1, 3, 5, 7, 8, 10, 12, 14, 17, 19, 21 and 26 to recite "asynchronously, but not periodically, replicating data" instead of reciting "asynchronously, aperiodically replicating data," in order to further clarify the claims. Since asynchronous and periodic replication are respectively discussed in at least ¶ [0029] and ¶ [0030] of the specification, the specification describes asynchronously, but not periodically, replicating data in such a way as to enable one skilled in the art to make and use the invention, thus meeting the enablement requirement.

Concerning asynchronous replication, ¶ [0029] states:

> Asynchronous replication utilizes a log area (e.g., a storage replicator log) to stage write operations such that the write operation can return as soon as data associated with the write operation (e.g., the data to be written, metadata, and the like) has been logged (i.e., stored) to this log area.

Concerning periodic replication, ¶ [0030] states:

> In periodic replication a site or node (e.g., a secondary node) is periodically updated with changes that have been written (e.g., to an intermediary node) over a period of time.

Thus, in light of the specification, one skilled in the art would recognize that at least one way of understanding asynchronous, but not periodic, replication is that asynchronous, but not periodic, replication comprises utilizing a log area to stage write operations to a first node but not updating the changes associated with those write operations to a second node in a periodic manner, at regular periods of time. For example, instead of updating periodically at regular periods of time, updating would take place when a certain condition was met, such as a user request being received to perform an update, the log area staging a certain number of write operations, or a communications link being sufficiently idle, and the like.

Thus, for at least the above reasons, Applicants respectfully request the reconsideration and withdrawal of this rejection.

Rejection of Claims under 35 U.S.C. §103

Claims 1, 3, 5-8, 10, 12-15, 17, and 19-21

Claims 1, 3, 5-8, 10, 12-15, 17, 19-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Federwisch, U.S. Patent No. 6,889,228 B1 ("Federwisch"), in view of

Patterson, et al., "SnapMirror: File-System-Based Asynchronous Mirroring for Disaster Recovery" ("Patterson"). *See* Office Action, pp. 3 and 8.. Applicants respectfully traverse this rejection.

Regarding independent claims 1, 3, 8, 10, 15, and 17, the Office Action cites Federwisch 6:15-55 and Federwisch, Fig. 2 in support of its assertion that Federwisch teaches "asynchronously, aperiodically replicating data." *See* Office Action, pp. 3 and 5. However, Applicants have amended these claims to recite "asynchronously, but not periodically, replicating data," as discussed above, to further clarify the claims. It is clear that Federwisch 6:15-55 and Federwisch, Fig. 2 fail to teach "asynchronously, but not periodically, replicating data."

Federwisch 6:15-55 states:

> In the preferred embodiment, the invention is implemented on a system that already implements conventional mirroring, for example using SnapMirror™ software developed by Network Appliance, Inc. When the invention is implemented on such a system, the existing snapmirror.conf file is used as the configuration file for the cascaded mirroring. In order to implement the invention, the existing snapmirror.conf file may have to be edited to reflect the cascaded mirroring made possible by the invention.
>
> In addition to the mirror configuration file, a command entered into either a filer or a mirror of that filer also preferably could initiate a mirroring operation.
>
> FIG. 2 is a block diagram of repeated mirroring of filers according to the invention. Briefly, the invention propagates data by mirroring the data from a first filer to a second filer, and then mirroring the data from the second filer to a third filer. Snapshots are used in mirroring the data. Preferably, the data is organized in one or more volumes on the filer, and one or more of the volumes are mirrored.
>
> In more detail, FIG. 2 shows an expansion of the idea of repeated mirroring into a cascade of mirrors. The term "cascade" is meant to convey a tree-like arrangement of filers along which volumes are mirrored. The invention is not limited by this term, which is merely used to help convey a general understanding of one possible embodiment of the invention. Of course, the invention also is not limited to the particular cascade shown in FIG. 2.
>
> In FIG. 2, filer A 10 contains two volumes, vol1 and vol2. Filer A 10 is the master filer for these volumes. Filer B 11 mirrors both of these volumes from filer A 10. Filer C 12 mirrors vol1 from filer B 11, and filer D 13 mirrors vol1 from filer C 12.

> Filer L 14 mirrors vol2 from filer A 10. This mirrored volume is designated as vol1 on filer L 14 because it is the only volume stored on filer L 14.
>
> Filer M 15 mirrors vol1 from filer L 14 (equivalent to vol2 on filer A 10), and filer N 16 mirrors vol1 from filer M 15. Filer X 17 mirrors vol1 from filer M15, and filers Y 18 and Z 19 mirror vol1 from filer X 17.
>
> Each filer preferably is configured along the lines of filer 1 in FIG. 1. Thus, each filer preferably stores softlocks. On filer A 10, the softlocks preferably indicate that snapshots of vol1 are needed by filers B 11, C 12 and D 13 because those filers mirror vol 1 from filer A 10.

Thus, it is clear that Federwisch 6:15-55 fails to teach "asynchronously, but not periodically, replicating data."

Likewise, Federwisch, Fig. 2 fails to teach "asynchronously, but not periodically, replicating data" for at least the reason that it fails to even mention either asynchronous or periodic replication.

In addition, Federwisch 6:15-55 and Federwisch, Fig. 2 fail to teach "asynchronously, but not periodically, replicating data" according to the interpretation of Federwisch offered by the Final Office Action, dated July 28, 2008. The Final Office Action states that since "Snapmirror **periodically** transfers self-consistent snapshots of the data from **a source volume** to the **destination volume**" it follows that "Federwisch's system is **both asynchronous** and **periodical** replication." The Final Office Action further notes that "each pair of replication as shown in Federwisch's Fig. 2 is implemented using Snapmirror asynchronous periodical replication." *See* Final Office Action, p. 8 (emphasis in original).

Thus, for at least the above reasons, including the assertion by the Final Office Action that Federwisch teaches the asynchronous, periodical replication of data, Applicants submit that Federwisch fails to teach "asynchronously, but not periodically, replicating data," and respectfully request the reconsideration and withdrawal of the

rejection against independent claims 1, 3, 8, 10, 15, and 17 and their respective dependent claims.

Claim 26

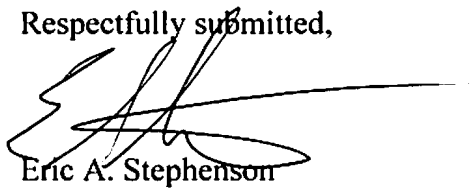
Claim 26 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Federwisch and Patterson, as applied to claims 1, 3, 5-8, 10, 12-15, 17 and 19-21 above, in view of Teloh, et al., U.S. Patent 2003/0014432 A1) ("Teloh"). Applicants respectfully request the reconsideration and withdrawal of this rejection for at least the reason that claim 26 is dependent upon allowable base claim 1.

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5089.

If any extensions of time under 37 C.F.R. § 1.136(a) are required in order for this submission to be considered timely, Applicant hereby petitions for such extensions. Applicant also hereby authorizes that any fees due for such extensions or any other fee associated with this submission, as specified in 37 C.F.R. § 1.16 or § 1.17, be charged to deposit account 502306.

Respectfully submitted,



Eric A. Stephenson
Attorney for Applicants
Reg. No. 38,321
Telephone: (512) 439-5093
Facsimile: (512) 439-5099